I. C. 6682

JANUARY, 1933

DEPARTMENT OF COMMERCE

UNITED STATES BUREAU OF MINES
SCOTT TURNER, DIRECTOR

INFORMATION CIRCULAR

THE PRESENT STATUS OF THE MINERAL INDUSTRY

RECEIVED
FEB 13 1933
O. S. U. LIBRARY

BY

SCOTT TURNER

I.C.6682.
January, 1932.

INFORMATION CIRCULAR

DEPARTMENT OF COMMERCE - BUREAU OF MINES

THE PRESENT STATUS OF THE MINERAL INDUSTRY[1]

By Scott Turner[2]

The settlers of a new country necessarily suffer at first from the lack of accumulated stocks of metals-in-use that are possessed in older countries. Our American colonists were at first compelled to import their metals in manufactured forms, and it must have proved difficult to produce an exportable surplus of commodities with which to pay for them. These circumstances stimulated a search for domestic ore deposits. Various discoveries resulted, so that as early as 1628, we find the colonists importing two craftsmen from England to establish iron-works in Massachusetts to beneficiate local ores. In 1648, an iron-works at Lynn was producing metal at an annual rate of 400 tons. Later on, the colonial iron industries became of importance, some metal being actually exported to England.

The people of this country thus early became convinced of the necessity for domestic mineral production. It is now little realized how persistent were their efforts to make mineral discoveries, before the gold-rush to California; the extraordinary success of our subsequent mineral explorations has overshadowed the earlier record.

Precise and complete accounting of our mineral production, having the character of national bookkeeping, is available only for the series of years beginning with 1880, when commences the official record that is provided by the Government publication called Mineral Resources of the United States. In the period of 52 years, from 1880 through 1932, the value of mineral production of the United States amounted to more than 122 billion dollars. Only 12 billions of this total were produced in the 21 years, 1880-1900, while nearly 110 billions were produced in the first 31 years of the present century.

Of this 110 billions, over 53 billions were produced in the most recent decade, 1921-1930, the production of the previous decade, 1911-1920, having been only 37 billions, though it included the war period; that of the decade 1901-1910 was 16 billions.

In 1931, the total value of mineral products of the United States was $3,180,000,000, compared with an average annual value of $5,556,000,000 during the previous five-year period, 1926-1930. The decline in 1931 from that average was therefore 43 per cent.

As to the three great groups of mineral commodities, metals fared worst, with a decline of 55 per cent in the value of their production, while the value of fuels declined 39 per cent, as did that of the nonmetals group.

---

[1] - The Bureau of Mines will welcome reprinting of this paper, provided the following footnote acknowledgment is used: "Reprinted from U. S. Bureau of Mines Information Circular 6682."
Speech delivered at annual convention of American Mining Congress, Mayflower Hotel, Washington, D. C., December 15, 1932, 2:30 p.m.

[2] - The director, U. S. Bureau of Mines.

This does not mean, however, that the nation was deprived of mineral supplies in proportion to this severe decline in their production-values. Comparing the quantity of production in 1931 with the average of the previous five years, it is found that the total quantity-decline was only 20 per cent, the amount of fuels produced having declined 15 per cent, while metal production, as measured by quantity, declined 40 per cent and nonmetals 24 per cent.

With respect to the individual status of the 1931 production of certain important mineral commodities, the following figures indicate the percentage of the average annual quantities produced in the five-year period 1926 to 1930:

Quantities in terms of percentage

Metals		Fuels		Nonmetals	
Gold	106	Natural gas	100	Sulphur	98
Aluminum	92	Petroleum	95	Crushed stone	79
Lead	61	Anthracite coal	78	Building stone	79
Copper	60	Bituminous coal	73	Sand and gravel	77
Silver	53			Portland cement	72
Zinc	51			Lime	64
Pig iron	47			Slate	58
				Gypsum	55

Among them, only two equaled or surpassed in 1931 their production-levels of 1926 to 1930; these were gold and natural gas. Only three others, sulphur, petroleum, and aluminum came within 90 per cent of their previous quantity-levels. All others fell below 80 per cent, and production-volume of three of these commodities, pig iron, zinc, and silver, declined approximately 50 per cent. These 19 commodities contribute about 85 per cent of the total value of mineral production.

Declines in unit prices have been nearly as severe as declines in production. The following tabulation shows the average 1931 prices of the same 19 mineral commodities, expressed as percentage of the average price during the period 1926-1930:

Unit prices, as percentages

Metals		Fuels		Nonmetals	
Gold	100	Natural gas	97	Sulphur	100
Aluminum	93	Anthracite coal	93	Gypsum	98
Pig iron	84	Bituminous coal	85	Sand and gravel	95
Lead	62	Petroleum	47	Building stone	93
Zinc	59			Crushed stone	90
Copper	58			Lime	82
Silver	54			Slate	81
				Portland cement	72

Gold and sulphur are unchanged in price. All other mineral commodities have declined in sales-value. In 1931, seven other of these 19 commodities still commanded 90 per cent or more of their previous average price. These are gypsum, natural gas, sand and gravel, aluminum, anthracite, crushed stone, and building stone. Petroleum, with a decline of 53 per cent, fared worst. Nevertheless, in view of the fact that the general price-level of all commodities in 1931 was only 77 per cent of the average from 1926 to 1930, the declines in prices of mineral commodities as shown by the above indices are less severe than they appear to be, because many items in the cost of production have been substantially lowered.

These figures serve to indicate the general background for the present status of the mineral industries as far as this is discernible in yearly records; as you all know, these declines in quantity, unit price, and total value have been extended into the current year, but not without temporary checks; some hopeful indications of abatement are supported by consideration of available facts.

It is apparent that the prices of many mineral commodities are lower than the average cost of production, and even the average cost does not normally determine price; it is determined by the highest-cost production that must be carried on to satisfy consumptive demand. Since this is true, it is obvious that such uneconomic prices cannot continue to prevail. They have generally been made possible through accumulation of excessive stocks, caused by that delay in curtailment of production that is now seen, in retrospect, to have been required. Curtailment, however, is being brought about by unbearable losses. In this fact there is warrant for anticipating betterment of prices. Surplus stocks are said to be held more firmly, and their future influence upon markets is therefore likely to be more static in character. Though tending to retard recovery of price, they should be less subject to distress-sales than in the past few years.

While the record of consumption is similar in character to the records of production and price, it is in the history of consumption that we find the most valid basis of reassurance as to the outlook for the future. During the past century, the consumption of mineral commodities has not only increased enormously, but it has advanced with a consistent percentage-increase suggestive of a deep-lying principle of growth, whose elements are too numerous and too complex in their mutual relations to be readily understood. Yet, the integration of all their effects is apparent.

Copper consumption in the United States, for example, increased from ½ pound per capita in 1830 to 18 pounds per capita in 1929; lead consumption similarly increased in that 100 years from about 1 pound per capita to 12 pounds per capita. Zinc consumption rose from less than one-tenth of a pound per capita to nearly 10 pounds.

Yet per capita consumption of copper had declined in 1931 to 9.65 pounds, per capita consumption of lead to 6.40 pounds, and of zinc to 5.50 pounds. It requires a severe stretch of the imagination to believe that the persistent trend of consumption, shown through this period of 100 years, is permanently checked because of its pause and recession during the past few years.

Similar occurrences, though usually less severe, have been witnessed in the past, when it was generally assumed that a plethora of mineral resources had permanently overwhelmed the mineral industries. This was not the case then; neither is it now. Confidence in the future of our country and in the intelligence, ability, resourcefulness, and courage of its population is fully warranted by 300 years of history.

The requirement for mineral production is soundly based upon the aspiration of our people for higher and higher standards of living, that require manufactures for which mineral raw materials are prime requisites. To illustrate this we may again resort to figures.

If we compare the growth of population with that of agricultural and mining production and with manufacturing, we find that from about 1860 to 1929 population increased about four times. This growth was closely paralleled by agricultural production, which increased a little over six times. Manufacturing increased about twenty-two times. Mining output increased sixty times. From this it would appear that if our standard of living is to continue to improve, and I have no doubt that it will, society will demand more and more mineral production for which it will and must pay an economic price.

In substance then, though the mineral industry, like other industries, is unmistakably in a severe state of decline, this condition should be appraised as only temporary. The logic of the situation does not permit a pessimistic view of the prospects for the future. When the call comes again for our industry to furnish the many mineral commodities essential to our national welfare, and necessary for the maintenance of our leading place among highly-organized industrial nations, I feel secure in the knowledge that our mines and quarries are being kept ready to resume large-scale operation, and to maintain a steady flow of these essential raw materials on whatever scale is necessary for our national needs.